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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,965	10/15/2003	David W. Bainbridge	2400/14(b)	8637

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EXAMINER	
VO, HAI	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/685,965	BAINBRIDGE, DAVID W.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30,32 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30,32 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. All of the art rejections based on Kasahara et al (US 4,034,506) are repeated.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8, 12, 15-18, 22-25, 27-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al (US 4,034,506) in view of DVD disc "Lectro Engineering Company, MTM Systems" and Frankel et al (US 5,252,657). Kasahara discloses a porous foam plate disposed on the surface of water contained in the casing comprising an aggregate of foamed polyethylene beads having a diameter 2 to 20 mm (column 2, line 66) within the claimed range. Kasahara discloses the foamed polyethylene beads being coated with a liquid adhesive that represents about 52 wt% of the foam plate (reference example, column 7, lines 5 and 11). Kasahara discloses the foamed beads being blended with a liquid adhesive (column 3, line 65 to column 4, lines 1-5). Likewise, the foamed beads would substantially have the entire surfaces coated with the liquid adhesive. The adhesive is made from a two-part thermoplastic resin or a two-part thermosetting resin (column 3, lines 25-60). Kasahara discloses a porous foam plate having a porosity of 37 volume percent and continuous open spaces among the adjacent beads, which reads on Applicant's

regular void distribution (column 7, lines 38, and abstract). Kasahara discloses the granular bead which reads on Applicant's spherical shape (column 5, line 60). Kasahara does not disclose the ellipsoid shape of the bead. However, the bead has a diameter within the claimed range and it appears the shape is dictated by the bead diameter. Therefore, it is not seen that the bead of Kasahara could have a shape different than that of the bead of the present invention. Kasahara does not disclose the inelastic or elastic properties of the bead. However, Kasahara uses the same material to form a bead as Applicant, i.e., polyethylene or polystyrene, it is the examiner's position that the inelastic or elastic properties should be inherently present. Like material has like property. This is in line with ***In re Spada***, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. Kasahara discloses that the adhesive is cured from a liquid state while in initial contact with the beads. Kasahara discloses the liquid adhesive having a viscosity of about 3 to 1000 cps at 20°C and solid content of 20 to 60 wt% based on the total weight of the adhesive (column 3, lines 5-10). Kasahara does not specifically disclose the hardness of the adhesive. Frankel, however, teaches an acrylic emulsion being useful as an adhesive (column 15, lines 25-26) and having a viscosity of about 3 to 1000 cps and solid content of 20 to 60 wt% based on the total weight of the adhesive. Frankel discloses that the adhesive having a shore A hardness of 25 within the claimed range (table V, example 15). Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to use the adhesive having a hardness as described by Frankel as the adhesive of Kasahara motivated by the desire to provide a porous foamed plate with improved toughness and tensile strength.

Kasahara does not specifically disclose the beads being treated with plasma prior to adhesive coating. A DVD disc "Lectro Engineering Company, MTM Systems" shows that the powdered material having a surface treated with plasma discharge to provide an increase in the surface energy of the material, thereby enhancing adhesive strength of the material. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the surface of the polyethylene beads treated with the plasma discharge prior to the adhesive coating motivated by the desire to provide an increase in the surface energy of the beads, thereby enhancing adhesive strength between the adhesive and the beads.

Kasahara does not specifically disclose the porous foam plate being placed in a cloth casing or in a net casing. The examiner takes Official Notice that it is common and well known in the hydroponics art to use the porous foam plate in combination with a cloth casing or a net casing. As such, it would have been obvious to a person having ordinary skill in the art to place the porous foam plate in the cloth casing or in the net casing because the cloth or the net is sufficiently permeable to water and air, exerts no harmful influence on the growth of the plants.

The preamble "construction material", "padding material" have not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Applicant states that the bead size differential helps give the applicant's padding materials their quality of "breathability" (page 12 of the amendment dated 12/03/2003). Kasahara discloses the beads having the size within the range required by the claims, therefore; the examiner found no reasons that the foam plate of Kasahara could not inherently have the breathability as the padding material of the present invention.

Kasahara as modified by DVD does not specifically disclose that the beads are electrical excitation treated more than once to accomplish more than one kind of treatment. However, it is a product-by-process limitation not as yet shown to produce a patentably distinct article. It is the examiner's position that the foam plate of Kasahara as modified by DVD is identical to or only slightly different than the claimed composite structure prepared by the method of the claim, because both articles are formed from the same materials, having structural similarity as discussed above. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted Declaration to show non-obviousness, the applicant should clearly state how the Examples of the present

invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with Kasahara/DVD.

4. Claims 9-11, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al (US 4,034,506) in view of DVD disc "Lectro Engineering Company, MTM Systems" and Frankel et al (US 5,252,657) as applied to claim 1 above, further in view of Shannon et al (US 4,777,763). Kasahara does not specifically disclose the beads formed from hollow ceramics or glass. Shannon, however, teaches a plant growing board for use in hydroponic gardening comprising polyethylene hollow beads, glass, clay hollow beads blended with the fibers to enable the board to float (column 8, lines 25-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the glass or clay hollow beads in combination with the polyethylene beads because such is an intended use of the material and Shannon provides necessary details to practice the invention of Kasahara.

5. Claims 14 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al (US 4,034,506) in view of DVD disc "Lectro Engineering Company, MTM Systems" and Frankel et al (US 5,252,657) as applied to claim 1 above, further in view of Schwab et al (US 3,877,172). Kasahara does not specifically disclose the beads formed from a thermosetting material. Schwab, however, teaches a foamed plastic profile member for hydroponic cultivation comprising a plurality of foam pieces held together by a foamed binder as shown

in figure 8. Schwab teaches the foam pieces made from a polyurethane, polystyrene and urea formaldehyde (column 5, lines 35-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the thermosetting material for the thermoplastic material to form the beads because two foam materials have been shown in the art to be recognized equivalent materials for use in the hydroponic cultivation and growth of plants.

6. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al (US 4,034,506) in view of DVD disc "Lectro Engineering Company, MTM Systems" and Frankel et al (US 5,252,657) as applied to claim 1 above, further in view of Tully et al (US 3,710,510). Kasahara does not specifically disclose the bead being coated with a coupling agent comprising silane as disclosed in the specification. Tully, however, teaches a plant growth media comprising expanded clays with a variety of particle sizes and coated with silane to render hydrophobic so as to sustain growth of young seedlings and to provide maximum opportunity for development of root system (column 2, lines 20-32, column 5, lines 10-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use expanded clays with a variety of particle sizes and coated with silane to render hydrophobic so as to sustain growth of young seedlings and to provide maximum opportunity for development of root system.

Response to Arguments

7. The declaration filed 09/14/2006 have been entered and reviewed thoroughly. However, it is found ineffective to overcome the finding of obviousness. Applicants argue that the DVD reference is non-analogous art to the claimed invention and therefore, the combined teachings of Kasahara and the DVD reference are improper to achieve the claimed invention. The arguments appear to be flawed and incomplete. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the DVD reference teaches the powdered material having a surface treated with plasma discharge to provide an increase in the surface energy of the material, thereby enhancing adhesive strength of the material. This is the particular problem with which Applicants were concerned. Applicants argue that there is no teaching or suggestion in Kasahara of enhancing adhesive strength. Applicants further state that increasing the adhesive strength between the beads would result in a structure that is unsuitable for use in the disclosed hydroponic method. The examiner respectfully disagrees. Applicants' attention is directed to Shannon et al (US 4,777,630) and Minoji (US 5,921,024). Both references are related to a plant growing medium having excellent compressive strength and exhibiting excellent root growth. Likewise, it is clearly apparent that increasing the adhesive strength between the beads of the Kasahara reference would not

render the porous foam plate unsuitable for use in the hydroponics as alleged by Applicants. Accordingly, the combination of references is sufficient to make out the *prima facie* case of obviousness and the art rejections are thus sustained.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Friday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai Vo

HV

HAI VO
PRIMARY EXAMINER